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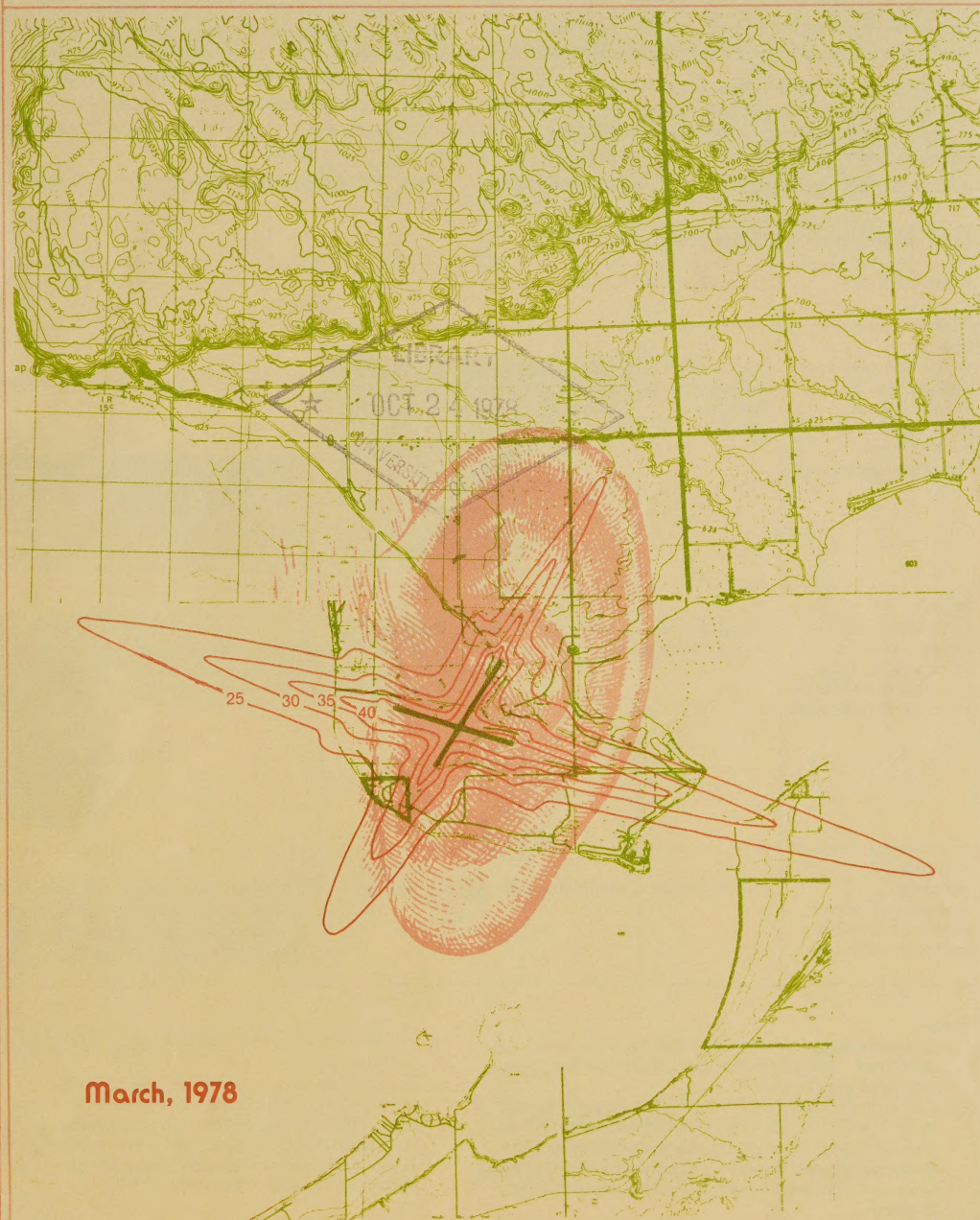
Ontario

Ministry of
Housing

Land-use policy near airports

based on the Noise Exposure Forecast (NEF) system

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Provincial land use policies established in 1969 to protect lands near airports have been revised by the Ministry of Housing through the adoption of a more accurate system of measuring discomfort caused by aircraft noise.

The new policy is based on the NEF (Noise Exposure Forecast) system which reflects the noise produced by all types of aircraft at an airport, taking into consideration the number of flights, the duration of the noise, the time of day and the frequency components of the sound (pure tones).

All land use proposals near airports must now adhere to the NEF Land Use Compatibility Table (below). The applicable NEF values should be determined from NEF contour maps prepared by Central Mortgage and Housing Corporation, based

on contours supplied by Transport Canada or by the Department of National Defence (see opposite). This table has been designed to reflect CMHC policy related to residential development * and also contains policies for non-residential uses.

The general principle underlying the restrictions is that the outdoor noise level should govern permissible uses of a property. However, some indoor uses which make almost no use of the outdoors may be permitted to almost any noise level provided they meet CMHC standards for acoustic insulation and ventilation. The latter requirement is necessary to ensure that the acoustic insulation value is not lost through the opening of windows.

* New Housing and Airport Noise, N.H.A. 5185 Metric Edition.

NEF land use compatibility table

Land uses (1)	Noise exposure forecast values				
	0	28	30	35	40
Group I residential, passive use park, school, library, church, theatre, auditorium, hospital, nursing home, camping or picnic area	In this range, noise is not usually a problem.	Discretionary Range All buildings must conform to Acoustic Design Criteria (2) (3).		Some annoyance will occur in this range but residential development will be acceptable if approved by the municipality (2)	No new Group I uses may be established in this range, except those for which the outdoor environment is irrelevant and which meet the Acoustic Design Criteria (3).
Group II hotel, motel, retail or service commercial, office, athletic field, playground, stadium, outdoor swimming pool	In this range, noise is not usually a problem.	Discretionary Range The characteristics of each proposed use must be studied and appropriate noise insulation must be incorporated into building design (3).			Group II uses may not be established beyond the 40 NEF contour unless they are adequately insulated indoor uses (3).
Group III industrial, warehousing, arena, general agriculture, animal breeding (4).	In this range, noise is not usually a serious problem.			Discretionary Range Most Group III uses are permissible in this range, provided ancillary uses are adequately insulated (3).	

Notes

- (1) Uses not specifically mentioned should be compared to the uses listed, classified in the most appropriate Group and regulated accordingly.
- (2) For residential uses, refer to "New Housing and Airport Noise", N.H.A. 5185-1-78 and any amendments thereto. Acoustic design must include adequate ventilation. The developer of a residential project must undertake to inform prospective tenants or purchasers of the possible noise problem.

- (3) For non-residential uses, refer to the Acoustic Design Criteria opposite.

- (4) Research has shown that most animals become conditioned to high noise levels. However, fur farms, and any use likely to create a bird hazard, such as a feed lot or stock yard, should not be located closer to an airport than as recommended by Transport Canada in "Land Use in the Vicinity of Airports", document S-77-4.

Acoustic design criteria for non-residential uses

The procedure described in Section E of "New Housing and Airport Noise" should be adapted to meet required sound insulation for non-residential buildings. Table 1 below shows the correction factor to be used with Table 2 of the CMHC handbook to determine the Acoustic Insulation Factor (AIF) for other uses. AIF values corresponding to NEF values above the 35 contour are obtained by extrapolation from the figures on Table 2 below.

Table 1

Correction factor

Hotel, motel	no correction
Private office area, conference room etc.	-5
General office areas, retail stores	-10

Hospitals, theatres, auditoriums, churches, libraries, schools and nursing homes are subject to the same requirements as residential uses.

Table 2

Acoustic insulation factor*

No. of components forming room envelope	NEF												
	25	26	27	28	29	30	31	32	33	34	35	40	45
1	20	21	22	23	24	25	26	27	28	29	30	35	40
2	23	24	25	26	27	28	29	30	31	32	33	38	43
3	25	26	27	28	29	30	31	32	33	34	35	40	45
4	26	27	28	29	30	31	32	33	34	35	36	41	46

* Table 2 of the CMHC handbook "New Housing and Airport Noise" (1978 edition), expanded to include NEF values above 35.

NEF contour maps

The currently available NEF contour maps are listed to the right. With the exception of Toronto International Airport (Malton), they are obtainable from local offices of the Central Mortgage and Housing Corporation. The Toronto Malton maps are available from the Local Planning Policy Branch, Ministry of Housing, Queen's Park, M7A 1Y7. Up-to-date contours for other airports are scheduled to be produced by Transport Canada and will be added to this list. In addition, it is expected that existing contour maps will be reviewed and up-dated from time to time.

Example 1

The AIF for a retail store within the 30 contour, assuming the room has 3 components, would be $30 - 10 = 20$.

With reference to Table A of the CMHC handbook, assuming a window area = 30% of the floor area, the window could be a single pane of 2 mm. glass. Within the 40 contour, the AIF would be $40 - 10 = 30$ and a similar store would need single pane of 4 mm. or 5 mm. glass.

Example 2

A private office associated with an industrial use in the vicinity of the 45 NEF contour would have an AIF of $46 - 5 = 41$. (Assuming 4 components). Assuming a window area = 25% of the floor area, triple glazing (a WT2-W1 window) would be required.

Airport	Ref. No.	Date of Latest Revision
Ottawa	OR 2	June, 1972
Hamilton	OR 3	Apr., 1973
London	OR 4	Jan., 1975
Windsor	OR 5	July, 1973
Thunder Bay	OR 6	Oct., 1974
Carp	OR 7	May, 1973
Kingston	OR 8	Apr., 1973
Sudbury	OR 9	June, 1973
Buttonville	OR10	Aug., 1973
Toronto Island	OR11	Aug., 1973
Oshawa	OR12	Sept., 1974
Maple/King City	OR13	Sept., 1973
Waterloo-Wellington	OR14	Apr., 1977
Sault Ste. Marie	OR15	Sept., 1974
C.F.B. Trenton	OR16	Dec., 1975
Brantford	OR17	Aug., 1977

